UNIVERSITY OF ALBERTA

folio

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Supercomputer multiplies processing power

By **Geoff McMaster**

The University of Alberta is flexing its gigabytes.

It has just purchased the most powerful computer in the Canadian academy. More than 100 times faster than a high-end desktop PC, the $2-million Cray Origin 2000 machine will increase research capability here by 15 times its previous level.

The supercomputer has 10 gigabytes of memory and more than 100 gigabytes of disk. There are only 45 other universities in the U.S. with as much processing muscle.

"For many of us, it arrived just in the nick of time, because we had a lot of projects we wanted to do and we didn't have the resources to do them," says physics professor Dr. John Samson, who spearheaded the acquisition along with Dr. Jonathan Schaeffer in computing science and Ron Senda in computing and network services.

"People were trying to find machines in the United States and Europe, anywhere they could go. Now they can do it here."

The Cray supercomputer will involve more than 100 researchers in 20 departments, from the hard sciences to business to the fine arts. Samson's own work focuses on space plasma physics, a field requiring heavy computational support.

"We try to model the environment in space, and it requires very large computers. It's somewhat akin to the modeling of the earth's atmosphere."

He said the Cray will be used for a long list of sophisticated simulations. Some of these include imaging of fluid dynamics, reservoirs, ocean currents and flows. In medicine, it will be applied to drug development, breast-cancer diagnosis and uncovering the genetic properties of DNA.

Tina Chang

Ron Senda, Jonathan Schaeffer and John Samson

Because the computer is a "parallel" machine, its 40 processors can go to work on a single problem or can operate separately on 40 problems at once. The increased speed will also allow for huge advances in virtual reality, reducing the number of days it takes to render a minute of animation from 37 to one.

While the computer has been up and running since April, the acquisition was officially announced last week at West Edmonton Mall's Fantasyland Hotel. A joint venture between the Universities of Alberta and Calgary, it is funded through a number of sources including the Alberta Intellectual Infrastructure Partnership Program, the Universities of Alberta and Calgary, and a merging of start-up funds for new members of the Faculty of Science.

However, Samson says landing this impressive piece of hardware is only the beginning of a much larger, $20-million plan to remain competitive internationally on the research front.

"Believe it or not this computer is not big enough to do some types of programs we'd like to do on campus. Computing ain't gonna slow down, and if you stand still, you're losing."

"The idea behind the new proposal is to build in an element of renewal, so we can stay current and modern and be very competitive in getting new faculty and doing exciting research ... We were invisible before, and we're visible now, but we want to do more than that."

Among other upgrades, the second phase of the project will expand the computer's multiprocessor and develop digital media laboratories at the Universities of Alberta, Calgary and Lethbridge. After three years, the project aims to provide an unprecedented level of computational support to private-sector, government and university researchers in Alberta.

Samson says the impact of the Multimedia Advanced Computational Infrastructure Project will be huge, affecting even Internet use in the province.

But the question on everyone's mind is, will Dr. Jonathan Schaeffer use the new computer to kick some more international butt in checkers, as he did with his famous Chinook program?

"He's probably not going to do more with checkers," says Samson. "He says it's overkill, since against a machine twenty times slower he'd beat everyone in the world. But he's pushing on in artificial intelligence." ■

Who's out to get ENS 402?

Department chair says there's no direct threat to cut environmental advocacy course

By **Lucianna Ciccocioppo**

Fears that a controversial environmental advocacy course offered at the U of A will be cut are premature, says Dr. Jim Beck, chair of the Department of Renewable Resources, despite a front-page story in the *Edmonton Journal* May 23.

In the *Journal* story, reporter Ed Struzik wrote "concerns it has offended the sensitivities of the forestry industry and the millions of dollars it donates to the university could see it dropped from the curriculum next year."

The story does not name any faculty members or forestry companies opposed to the course.

Bob Udell, manager of forest policy and environmental affairs for Weldwood of Canada shrugged off any concerns and was quoted "I have no particular problem with the course." Struzik says a call to Weyerhauser Canada was not returned before the story went to print.

The two forestry companies recently donated a combined $950,000 to create an Institute of Enhanced Forest Management at the U of A.

"It's a non-issue to the forest industry sector once they see it's not an environmental terrorism course," says Beck.

Struzik says he was approached by a group of professors "who asked to remain very anonymous," about their concerns that corporate dollars to the U of A would dictate whether the course ENS 402 would continue next year.

"There's a general sense that politics has taken control of the issue, not the question of academic integrity," says Struzik. "They feel forestry companies are flexing their muscles, not perhaps directly, perhaps indirectly. Some people in the university may be influenced, but not Jim Beck."

In fact, says Struzik, the professors were concerned about much more than the future of one class. "Somehow, it turned into a debate over corporate sponsorship of the university programs. Whether real or not real, does it constitute a threat to academic integrity?"

Beck says he received about six complaints, on and off campus, since the course was offered for one semester last year. "I had faculty members say to me—who don't know the forest industry sector—'Will this affect donations?' and I said no. I don't think they're [faculty members] worried. They trust my judgment about the forest industry sector. I told them we would be getting money from Weyerhauser and Weldwood and I was right."

When pressed to name the concerned faculty members, Beck said these were comments made in passing, not formal complaints.

The environmental course, taught by Dr. Jim Butler in renewable resources, is considered unconventional compared to other academic courses. It was offered for the first time as a special topic course, and is currently going through normal channels to be approved as part of the environmental conservation program.

Butler teaches students about advocacy procedures and legal aspects of environmental issues and encourages them to attend environmental protests, such as rallies against the Cheviot mine near Jasper National Park, demonstrations against captive dolphins at West Edmonton Mall and the grizzly bear hunt in Alberta. "It's about individual empowerment," says Butler.

"I was talking to another faculty member, who suggested there may be a rocky road ahead," says Butler. "People are asking about it because of the issue it represents. My feeling is there's not a problem. It's going through the process and going to a debate. It symbolizes the conflict of who decides what's taught."

Butler says there were no obstacles to course approval at the departmental level and anticipates there will be none at the faculty level. "It's not an issue until GFC. It happens all the time because that's when faculties have their shot at it," says Butler. He predicts a hearty debate with strong opinions on either side. ■

PROCEDURE FOR COURSE AND PROGRAM CHANGES

According to General Faculties Council policy, all course changes, including introducing new courses or deleting them, must first be approved by faculty councils. Course changes are then forwarded to the secretary to GFC, who then forwards the information to deans, department chairs and other interested parties. Once a month, during the first week, the secretary circulates all changes received to the pertinent parties for comments or challenges.

WHAT'S OPEN TO CHALLENGE?

- Introducing new courses
- Dropping existing courses
- Content changes to existing courses which alter the nature of the course
- Changes in prerequisites, options and weights

Challenges can only be made with respect to individual courses and must include reasons relating to the specific course in question.

WHAT HAPPENS NEXT?

Anyone can make a challenge. Challenges which are not resolved between the faculties concerned must be reported to the GFC secretary within two weeks. If the challenge cannot be resolved at the department and faculty level, the challenge moves forward to the executive committee of GFC for final resolution. The executive committee can decide whether a challenge is frivolous but if it is deemed a policy issue, the issue goes before the GFC.

Faculties may assume their course changes have been finally approved if no notice of challenge is received from the GFC secretary by the end of the third week of circulation.

Source: 1997 GFC policy manual, section 37

»» quick »» facts

Lighting up our lives?

Industry leaders agree consumers should benefit from deregulation

By **Marie Lesoway**

Most Albertans light up with a flick of a switch and scarcely a thought for the coal and natural gas fueling our generating plants or the jangle of wires delivering power throughout the province. We are unaware that, at an average 2.7cents per kilowatt hour, our electricity costs are among the lowest in the world. We scarcely notice which major provincial utility—TransAlta, Alberta Power or EPCOR—sends us our bill. As for the legislation that defines the industry, we never give it a second thought.

But electricity legislation was very much on the minds of presenters at a recent seminar on electricity deregulation sponsored by the Faculty of Business. The government's passage of Bill 27, the Electric Utilities Amendment Act, lays the groundwork for introducing "full retail competition in the industry." For electric utilities, market-driven competition should increase efficiency, enhance innovation, and allow management to respond more quickly to business changes. For the rest of us, the new amendment should mean lower power rates and the freedom to choose our electricity supplier.

How will it work? Larry Charach, Guy Bridgeman, Jim Beckett, and Richard Gallant provided front-line perspectives. Charach outlined the government's policy. Bridgeman and Beckett discussed the implications for power companies and Gallant presented the viewpoint of industrial consumers.

Charach, executive director of the Electricity Branch at the Department of Energy, provided a context for Bill 27. A consultative process involving all stakeholders was launched in 1994. The act was passed in 1995 and a competitive power pool created in 1996. As Charach explained, "all generators have the right to offer their power into the pool and are paid the hourly pool price for the energy they produce." The price is determined through supply and demand and set by the power pool itself. This means "market forces, not regulators, drive the industry."

For existing generation plants, the 1995 act legislated financial arrangements—pool price "hedges"—that ensure consumers pay and generators get the regulated book costs for power. Under that act, new plants would depend on the market. By 2001, legislated arrangements for existing plants will be replaced by an open auction of long-term, incentive-driven, "power purchase contracts." The new process will increase the number of power sellers in the province. This will encourage competition and provide more choice for consumers, says Charach. Deregulation also establishes a level playing field and encourages new investment, he said.

Guy Bridgeman, EPCOR's director of regulatory affairs, and Jim Beckett, vice-president of transmission at Alberta Power, were cautiously optimistic about the opportunities a deregulated industry might offer. Beckett sees purchase power agreements (PPAs) as a welcome improvement over the "extensive, expensive, and adversarial" process of regulatory hearings that marked the old regime. Bridgeman also favors the PPA process, but said several issues must be resolved before Alberta's electric utilities can offer their full endorsement of Bill 27. An acceptable transition process must be defined, appeal and approval processes established, and generators protected against power marketers' credit risks. Producers have no say regarding who will market their power in a deregulated environment, he says, and they cannot risk being affected by the poor performance of the marketer.

Richard Gallant, chair of the Industry Restructuring and Regulatory Committees of the Industrial Power Consumers Association of Alberta (IPCAA), shared concerns about unresolved issues. While IPCAA has been one of the strongest supporters of deregulation, Gallant is concerned about the cost of transition which he projected would reach $500 million by 2001. This cost—a loss to consumers, he says—results from issues such as "loose juice"—the portion of generating plant output not covered by the new regulations. The benefits of this output should be transferred to consumers, but instead, they remain in the hands of distributors and electric utilities, he says. Bill 27's promised benefits of customer choice cannot be realized as long as customers are expected to negotiate "in an information vacuum." While government initiatives have created a new terminology and new institutional structures, Gallant fears the end result may be "the same old, tired utilities doing the same business in the same old, tired way."

Seminars on "The Status of Electricity Deregulation" were held at the University of Alberta Faculty of Business on May 15, and at the University of Calgary Faculty of Management on May 4, 1998. The seminars were sponsored by the Energy and Natural Resources Program Development project—a cooperative initiative of the two faculties. ■

Richard Gallant

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University of Alberta

. . . it makes *sense*

Brain drain

By **Geoff McMaster**

When the bidding war over Edmonton Oilers goalie Curtis Joseph starts this summer, his situation will be remarkably similar to many professors at the University of Alberta. As a star goalie who hit his stride with a young team and went on to demonstrate exceptional talent, he has attracted much attention south of the border. Now that he's at the top of his game, it's unlikely the Edmonton franchise will have pockets deep enough to keep him.

While the university may seem like a far cry from the world of professional sports, the competition for talent can be just as fierce. The U of A has already lost several international stars, mainly to more affluent institutions and companies in the U.S. And with the already alarming discrepancy between Canadian and American research funding expected to grow, holding our best and brightest may be the toughest challenge of the next decade.

"You can beat your head against a wall for only so long before you say, 'I'm going where there's more money,'" says Dr. Joel Weiner, associate dean of the Faculty of Medicine and Oral Health Sciences. "We're in a very mobile business where people are always being recruited. They're hot property, like a free agent with the Oilers, and if you can't come up with the money, they'll go where the opportunities are best."

The most competitive disciplines, not surprisingly, are in rapidly growing, high-tech fields such as biotechnology, computing science, and engineering. Perhaps more surprising though, salaries are not the primary incentive for those who leave. What it almost always boils down to, says Weiner, is research funding.

"The dollars available to carry out competitive international research programs are very difficult to get here. So people spend all their time writing grant proposals to try and remain competitive, or they move to the States where they get the money they need to be at the top."

When you consider the Canadian government spends only $9.25 per capita on research compared to $73 in the U.S., says Weiner, it's no wonder running with the international competition can feel like a losing race. And things are likely to get worse before they get better. The U.S. National Institute of Health, for instance, the country's largest medical research body, will increase funding by $1 billion in the next year, and double its $9.5 billion budget over the next five years.

"Ours is now back up to 1994 levels, but that's small potatoes," says Weiner. "We need $500 million more into the system in Canada (immediately)."

Precise figures on just how many of our professors have fled to greener pastures are not available, says Associate VP Research Dr. Ron Kratochvil. But according to Weiner, statistics don't begin to tell the story anyway, since it is indeed the Curtis Josephs of the academic community we tend to lose.

"If you look at the gross numbers, we've recruited more people than we've lost, but most of those are junior people," says Weiner. "You have to distinguish between total numbers and key people. There is 10-20 per cent of faculty who are leadership—the university has its reputation because those people are here. Over the past year we've had four or five of those people leave, and that's a significant hit." Major recent losses in medicine include Drs. Susan Rosenberg and Lung-Ji Chang in biochemistry, and Drs. Randy Read and Zygmunt Derewenda in medical microbiology and immunology.

Kratochvil says his big worry is that the U of A will become a "farm team," training junior academics only to watch them head to the major leagues to make their most significant contributions or breakthroughs. "It's going to be a growing problem with us because we have, in the last ten or fifteen years, hired some really top-notch people who are really coming into their own now, and we are losing some of them. And we have a lot of people coming in now that we're going to have to worry about soon."

"As soon as we get through this hiring phase, where we've been given some funding earmarked for start-up for new faculty, we're immediately going to have to go into a retention phase to keep these people."

> ...maintaining state-of-the art research facilities is crucial to plugging the brain drain.

Acquiring the powerful Cray Origin 2000 computer will no doubt go a long way to raising the university's research profile. In fact, says physics professor Dr. John Samson, the computer has already played a big role in attracting new faculty.

"This gives us an opportunity to be competitive with industry," he says. "In fact we've already had two very good hires in the Faculty of Science where having these new facilities helped expedite the hirings quite a bit."

Administrators agree maintaining state-of-the art research facilities is crucial to plugging the brain drain. That's why the latest batch of proposals for Canadian Foundation for Innovation funding, sent to Ottawa this week, is being so closely monitored by university brass.

Put simply, careers hang in the balance. If big money doesn't come through for some extensive physical renovations and equipment, many professors could soon be packing.

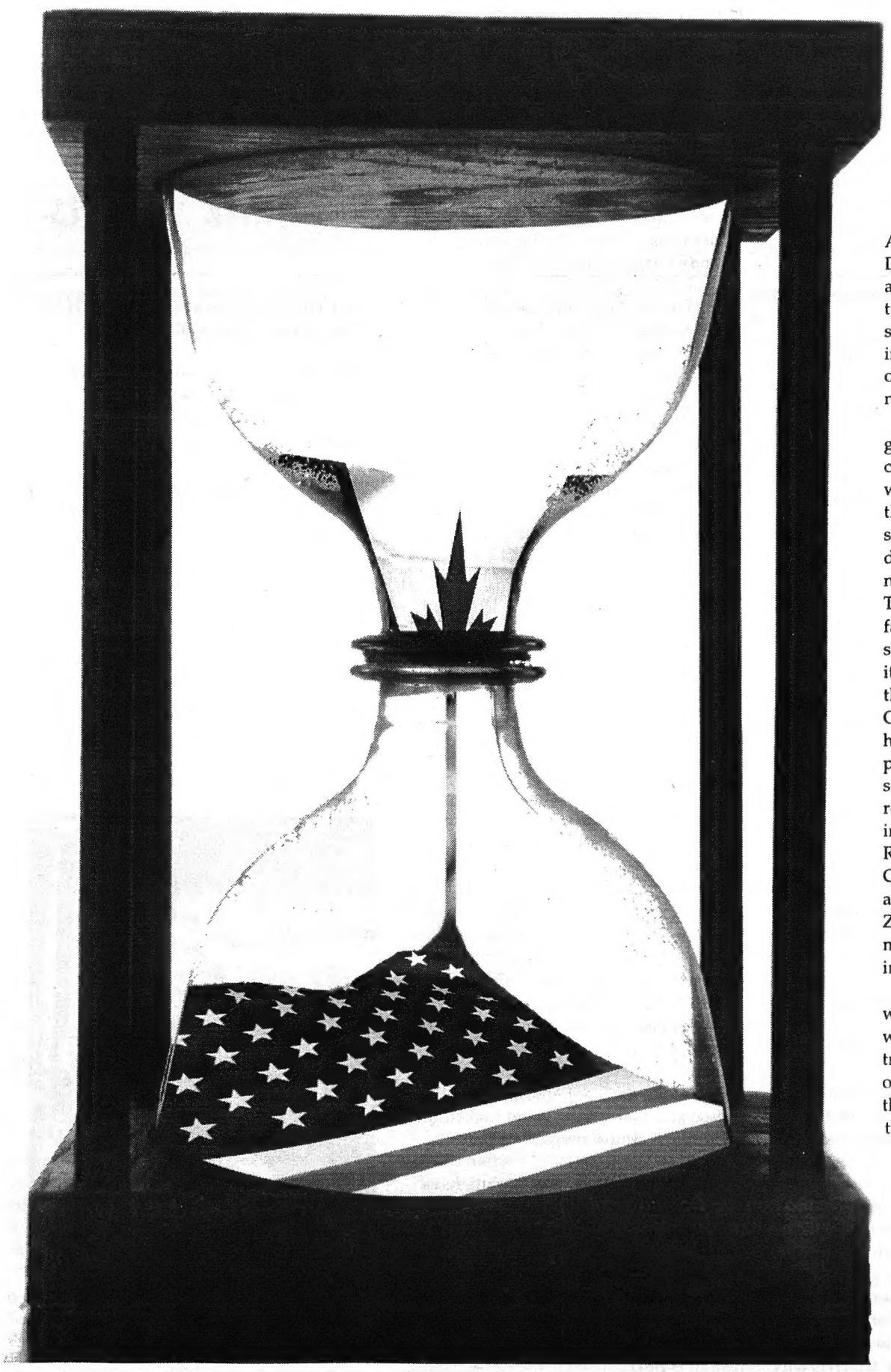
The computing science department, for example, is planning a major expansion in the next five years. Their proposal involves renovating three floors of Athabasca Hall and building a new annex to consolidate its faculty, now scattered among several buildings. So far the department has managed to hang on to its strongest people in one of the most cut-throat sectors of the economy. But without CFI funding, that success story could turn on a dime, says computing science chair Dr. Paul Sorenson.

"We've done fairly well...Last year we were quite successful in terms of filling positions that were open, but over the next five years it's going to be a big thing. I think if we're not able to get the infrastructure the building will provide, and some other things, there could be a pretty big exit here."

According to Kratochvil, the university must adopt a two-pronged strategy to win the recruiting and retention war. Aside from ensuring the best possible research facilities, it must also build "critical masses" to create a stimulating intellectual community of scholars.

"For most disciplines you find that you get a core of strong people, and this tends to attract other strong people." That means "not just hiring here and there, but deciding what areas you're going to build into real areas of excellence."

Amidst all the doom-and-gloom forecasting, however, it's reassuring to know the university sometimes comes out on top in the battle over brains, and occasionally even ends up hiring people back from the U.S. The return of nursing professor Jan Morse from Penn State last year, for instance, is one of several cases where "we're actually reversing the brain drain a bit," says Kratochvil. ■



Bears make their mark in NHL

By **Phoebe Dey**

To say Cory Cross is a success story would be a bit of an understatement.

When the teenager from Lloydminster, Alberta enrolled in a phys ed course at the University of Alberta many years ago, no one would have predicted it would lead to a career in the National Hockey League and the opportunity to play in two world championships.

The six-foot-five, 220 lb. education student was taking a hockey course under the guidance of legendary Golden Bear Hockey coach Bill Moores. Moores recognized Cross's skills and set him up with the junior B Edmonton Royals. After a year with the junior team and studying at university at the same time, Cross made the Golden Bears squad in 1990.

Two years later he was drafted by the Tampa Bay Lightning of the NHL.

Cross played the next full season with the Bears before being called up to Atlanta, Tampa Bay's farm team in the International Hockey League. His final exams were deferred and when his stint in Atlanta was finished, he returned to Edmonton, wrote the exams and graduated with a Bachelor of Education.

"It had a lot to do with being in the right place at the right time," said Cross from his home in Tampa Bay, Florida. "Somebody heard about me and told somebody else and then I was chosen by the team."

It also had a lot to do with hard work, determination and smart hockey sense.

"He's so successful because he plays a very simple game," said Scott McDonald, who played with Cross with the Royals and then three years in university. "He does all the little things right. He played the same game at the university as he does in the NHL.

"The biggest compliment to be paid to a steady defencemen is that you hardly notice him," said McDonald. "You don't notice him making mistakes because he rarely makes any."

Without his years at the university, Cross, 27, obviously would not be where he is today.

"Coach Moore, Peter Esdale and Dan Peacock taught me a lot," said Cross, who recently returned from the world championships in Zurich, Switzerland. "They provided me the opportunity to keep playing hockey when I otherwise might not have been able to."

During his reign as a Golden Bear, the defenceman was part of the 1991-92 national championship team and in 1993 was named to the Canada West University Athletics Association All-Star second team.

"At university we were so close as a team since we were with each other for three years and knew each other so well. Being as tight a team as we were and winning a national championship made it so special," he said.

But Cross's career highlight was when he won the world championship in Helsinki in 1997. "It was probably the biggest thrill of my life," he said. "It was great to win nationals at the university level but when you advance levels and win a championship it is even more thrilling."

The skill level combined with faster, harder-hitting hockey is the difference between the NHL and university hockey, said Cross, but he is still surprised more players in the university system do no make it up to the NHL.

"It's surprising because there were a lot of good hockey players in university," said Cross. "Out of our team that won nationals, probably 10 guys went on to play pro, but most of them are in Europe.

"I'm surprised there aren't more in North America."

Cross has one more year left in his contract with Tampa Bay before he becomes a free agent. After an incredible journey from junior B in Alberta to two world championships and five years in the NHL, the Golden Bear alumnus will likely continue on a successful, determined path. It's not a matter of being in the right place at the right time for Cory Cross. Not anymore. ■

U OF A CONTRIBUTIONS TO THE NHL

As a testament to the excellence of the University of Alberta hockey program, many former Golden Bears have graced the rosters of NHL teams. Assistant Coach Eric Thurston said the program is so successful because it focuses on more than just the game of hockey.

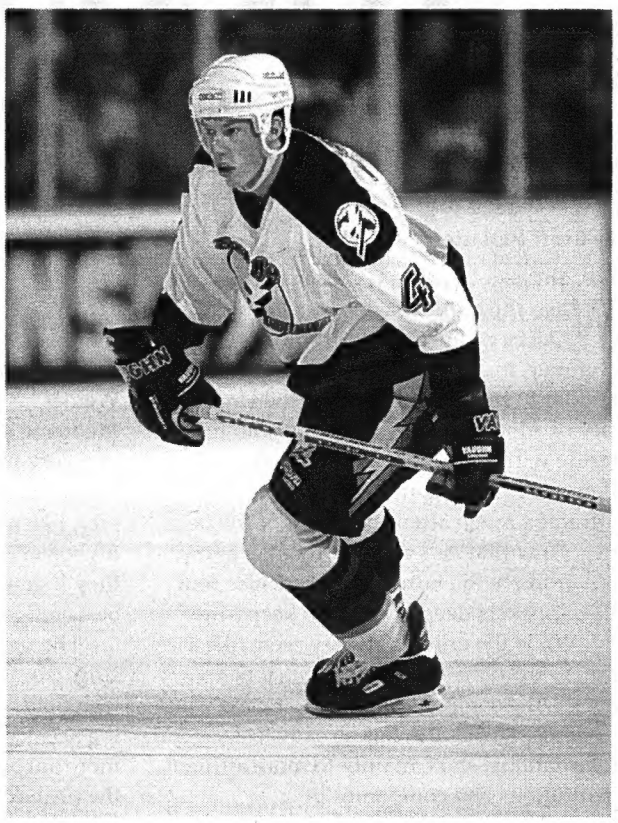
"Hockey is the vehicle in which we use to develop people," said Thurston. "Besides hockey, so much in this program is the de elopment of the personality."

"What I've seen is such a positive atmosphere that surrounds the team," he said. "There is a great alumni, coaches and a great university."

While Thurston is surprised more players have not gone up to the NHL after their university career, he thinks that trend will change. "University hockey is the best kept secret, which is too bad for the NHL," he said. "But it will become more prevalent with more teams coming into the NHL. That league will have to find more avenues and they will look to the University of Alberta and the Canadian universities."

The following is a listing of Golden Bears who have reached the top in professional hockey:

Brent Severyn: NY Islanders, Colorado Avalanche, Florida Panthers, Quebec Nordiques
Cory Cross: Tampa Bay Lightning
Randy Gregg: Edmonton Oilers, Vancouver Canucks
Ian Herbers: Edmonton Oilers
Don Spring: Winnipeg Jets
Kevin Primeau:Edmonton Oilers (WHA), Vancouver Canucks (NHL)
Dave Hindmarch: Calgary Flames
Ted Olson: Minnesota North Stars
Shaun Clouston: NY Rangers
Dan Wiebe: Quebec Nordiques
Colin Chisholm: Minnesota North Stars
Danny Arndt: Edmonton Oilers (WHA)
Dave Mackay: Chicago Blackhawks
Jack Gibson: Ottawa Nationals (WHA)
Ross Barros: Phoenix Roadrunners (WHA)
Steve Carlyle: Edmonton Oilers (WHA)
Cy Thomas: Chicago Blackhawks, Toronto Maple Leafs
Wade Campbell: Winnipeg Jets, Boston Bruins
Brian Baltimore: Chicago, Denver, Ottawa, Indianapolis, Cincinnati (WHA), Edmonton Oilers



Jonathan Hayt

Cory Cross with the NHL's Tampa Bay Lightning

U OF A TOPS THE CHARTS ON SMART ATHLETES

- **The U of A has once again chalked up the most Canadian Interuniversity Athletic Union (CIAU) All-Canadians in the country—63. This marks the sixth time in the last seven years the U of A has led the nation in this prestigious category.**

»» quick »» facts

No way—whey!

Can Little Miss Muffet's favorite food help athletes?

By **Roger Armstrong**

Some claim whey is not only a good source of energy for competitive athletes but that it is anti-carcinogenic, wound healing and a healthy substitute for steroids. "Body builders use it and swear by it," says Dr. Paul Jelen from the Department of Agriculture, Food and Nutritional Sciences who is investigating the tissue healing effects of whey.

"I am basically a walking advertisement... and I say that only half tongue in cheek," says Jelen. "Because I got my hip replaced middle of November. I was back on both feet, threw away the crutches and basically walking without any problems by the end of December and I was taking about two spoons of the whey protein every day."

Jelen says he knows of a professional hockey player who, when injured, heads to the health store to pick up some whey powder in order to return to the rink faster. This healing property of whey is where Jelen will be concentrating his research.

So what exactly is whey? It's the greenish liquid that comes out of a cheese vat—"out of milk really," says Jelen. To make one kilogram of cheese, you require 10 kg of milk and what is left over is nine kg of whey. Ninety-three per cent of whey is water, five per cent lactose and two per cent other nutrients, but it is the effect of this two per cent which gives rise to all the claims of whey.

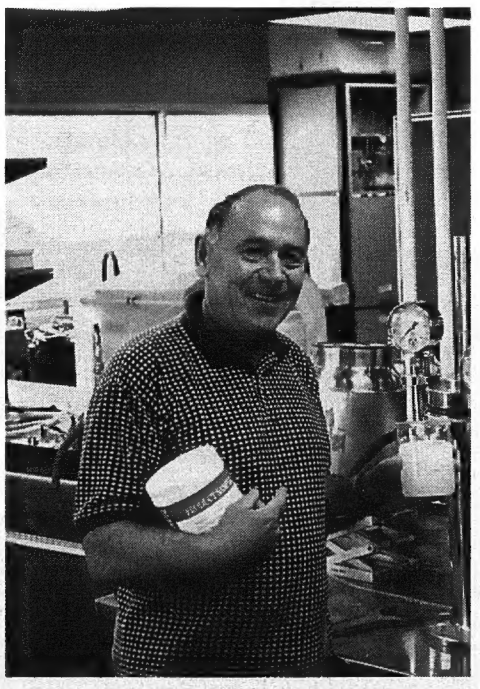
Whey is not new. "There were whey houses in England for example in the 19th century," says Jelen. "...Even before that... there was the little Miss Muffet sitting on the tuffet—she was drinking whey and eating curd."

"Today the main thing is not to dump it down the drain," says Jelen. "It is the second most potent pollutant from a food industry if you dump it down the drain untreated." Whey stimulates growth of algae, which takes oxygen out of the water, and suffocates other aquatic life forms.

"There is more whey than the whole world can drink," says Jelen, which is why researchers are anxious to find a good use for it. "This is a world-wide problem and now it becomes a world-wide opportunity."

Once water is removed from whey a white powder rich in lactose and protein is left. "Chemically speaking there is quite an array of individual proteins that have different properties...milk of every mammal has these proteins." The nutrients in milk are said to have bioactive properties. Jelen says, "20 per cent of milk protein does not end up in the cheese and that is now being looked for all kinds of almost magical, mythical properties."

Jelen's colleagues in Australia have been working on the anti-carcinogenic aspects of whey. "They have used the animal models, they have got several publications that show clearly that, at least in the animal model with chemical induction of the cancer, this is a very effective protein," says Jelen. Human testing is next.



Dr. Paul Jelen

opinion
guest columns

Indian tests highlight folly of current nuclear treaties

By **Dr. Shyamal Bagchee**, professor of English

David Kyd lives in Vienna. He is an official of some sort at the International Atomic Energy Commission (IAEC), and he knows every thing about nuclear regulations and treaties—for example, The Nuclear Non-Proliferation Treaty (NPT) and The Comprehensive Nuclear Test Ban Treaty (CTBT). There being no treaty that asks for total and immediate ban on nuclear weapons or total and immediate nuclear disarmament, such extreme issues do not, of course, much vex our friend. But if I am to believe newspaper reports, David is mighty perplexed these days—although, initially he wasn't fazed at all by India's recent atomic tests. He was certain that the incident did not make India a "nuclear *weapon* state," and he seemed content. However, when it was pointed out that it is not beyond the realm of possibility that India just might "weaponize" its armed forces, David was much perturbed. It appears that his feelings were not affected primarily by any great anxiety about the unsafe future of humanity, but by the supposedly flagrant illogicality of there being any more than the five "nuclear weapon states" mandated by Article 9 of NPT. History, it is evident, must unfold according to articles in treaties sponsored by the mighty and the elect. No matter how many countries enhance their arsenals with nuclear stuff, for Kyd the central issue will always be of definitions, of clauses and subclauses, of what might or might not be allowed by the wording in a document. Of who violates the exclusivity of the P5 Club.

Then there is the CIA/NASA intelligence complex, which failed to predict the tests on both occasions but has by now pretty well satisfied itself that it had not been proved incompetent. Rather, these surveillance experts assert, India had "deceived" them by diverting the intelligence gathering operation's attention to a decoy rocket-launching site on the eastern coast—the other end of the country from Thar desert! Surely, "deceiving" the mighty American spying network must be an unpardonably immoral act: after all, in accusing India of deception the CIA cannot but advance for the United States a claim for moral superiority.

Kyd's strange "categorical" conundrum and CIA's ludicrous moral outrage are, perhaps, the only comical aspects of this overall sombre affair. Unfortunately, international response to the testing of atomic devices by India earlier this month has mostly been characterized by the obtuseness of the Messrs Kyds of the world. No one can be expected to be happy over the new nuclear situation. And the affair can—in circumstances I would think most unlikely—lead even to a nuclear conflict threatening all of us. But, nuclear war can result from the possession of nuclear power by *any* country—including the P5 nations. The non-proliferation-ist assumption that U.S.A., Britain, France, Russia and (reluctantly) China know how to maintain moral control over their weapons makes no deep rational sense, and might also be selectively racist in its implications. The fact that over 140 countries have signed the treaty is irrelevant, because all non-P5 countries have, by the very act of agreeing to the discriminatory arrangement, lent support not to world peace but to an unjust world order. Most of these countries are either incapable of producing nuclear arms, or are not permitted to do so, or—worse still—survive under the military protection of one or the other nuclear nation.

> The non-proliferation-ist assumption that U.S.A., Britain, France, Russia and (reluctantly) China know how to maintain moral control over their weapons makes no deep rational sense, and might also be selectively racist in its implications.

It is probable that India's nuclear move, at this juncture, is linked in some degree to the insecurities of a shaky minority government, which also has a prominently non-secular cast. However, in explaining the situation primarily in this way—as many have—one ascribes too much authority to a conveniently common-sense approach based mainly on the accidents of immediate history. The contradiction inherent in this superficial trust in reason is certainly proven by the same critics' far-from-reasonable belief in the supposedly non-threatening—if not actually benevolent—attributes of, say, America's nuclear weapons. After all, nearly 35,000 nuclear warheads remain stockpiled, justified by an absurdly docile acceptance of the value of "vertical proliferation." It is then particularly pathetic to witness the screaming and pretended outrage emanating from secondary First World nations like Australia (a major broker of these discriminatory treaties) and Canada. Yet another similarly reasonable-sounding position expresses moral disgust with India because it has supposedly diverted money that should have gone to feeding the poor into military muscle-flexing exercises. This line of thinking ignores America's politically expedient granting of "most favored nation" status to a notoriously undemocratic and militarily hostile China, a political factor that has already forced India to increase its national security expenditure.

> If the world is to have a number of super-states—and evidently it does—India would consider itself one.

I think it is possible to understand India's position in terms that are a bit more abstract, perhaps even philosophical—terms that are less reliant on facts of immediate history, and are seemingly less "rational." I am not a journalist, and prefer to take the longer albeit less directly verifiable view. *Folio* has invited me to contribute an "opinion" piece. I do so as briefly as possible, and through an interpretation of a peculiarity of the Indian mind. (I am afraid, I am far from keen to provide merely an "ethnic" reading of a bit of current news.) Of course, I presume that there is such a thing as an Indian mind, or a widely-shared Indian perception of the country itself and its relationship with the rest of the world. In this typical Indian view, that relationship is of *equivalence*: India perceives itself as a metropolitan culture and, therefore, considers itself to be one of the centres of the world. If the world is to have a number of super-states—and evidently it does—India would consider itself one. Citizens of all important and powerful states think this way, although the connotations of the word "powerful" and what constitutes power necessarily vary from one country to the other. While the less power-hungry nations (which may really have no option in the matter) routinely claim a dubious moral superiority for themselves, they seldom dominate the world's attention and imagination in the way China or America does, or does India. There is, in this sense, a correlation between a major culture's perception of its central place in the scheme of things, and other peoples' glad or grudging acknowledgment of that centrality. And these specially privileged countries hold distinct views about the entire world and how it must operate. This is the particular nation's world-view, and it informs its actions more deeply than immediate contingencies of history. In fact, the Indian world-view—and calling it a mere sentiment (which it probably also is) will not make any real difference to the fact that it exists—is held by most Indian artists, thinkers, intellectuals and opinion makers who live and work *in India*. Moreover, the fact of India's complex economic woes, or the fact that many Indians are desperately seeking immigration abroad does not affect the way the culture views itself and views the rest of us. India has always been hard to understand, but this difficulty is especially apparent in the Anglophone countries of the Western world—countries to which most emigrating Indians tend to flock. The visibility of a large and largely self-serving diaspora, creates a distorted perception of India in the host countries. India cannot base its actions on a premise of keeping the expatriate from being embarrassed.

> There is much easy talk in world press of India having now killed Mahatma Gandhi a second time. The world's record is much too stained to make its pro-peace claims credible.

I am not pleased with the tests, but that will not matter to India. As a student of its history and culture, I know threatening Pakistan is only the most superficial aspect of the event. Even the keenest jingoistic attitude of the new government in India could not have produced the elaborate indigenous nuclear technology in three or four weeks. Pakistan may be a constant irritant for India, but simply being mightier than Pakistan is not the primary issue for India. In terms of the notion of equivalence I have tried to outline, Pakistan is not a real rival. China is, but not only because of the border dispute. The tests send a message to the world about the folly of its current nuclear arrangements; and no country has more consistently and strenuously sought total nuclear disarmament than India. An impractical and idealistic position? But a thoroughly courageous one as well: that's what leadership is all about. My only fear is that the unstable government now running the country may become satisfied merely with the immediate political gain, and be amenable to signing CTBT without getting its dangerous and discriminating loopholes sealed. If that happens there will be no meaningful nuclear disarmament in the world. There is much easy talk in world press of India having now killed Mahatma Gandhi a second time. The world's record is much too stained to make its pro-peace claims credible. Also, Gandhi did not support peace merely in a negative way, nor did he think national security a non-issue. As long as India does not make military use of its nuclear power, its current action can prove to be the only one that will bring nuclear sanity to the world: no nuclear weapon anywhere. For the first time in history the world has a nuclear state that does not haw and hem in the matter of total nuclear disarmament. It is sad that Pokharan had to happen to bring this about. Nevertheless, the number that we ought to worry about is 35,000, not five (three? for Kyd's treaties do not count the sub-kilotons!") ■

folio letters
to the editor

"Inside Out" is backwards too

I just browsed through the last *Folio* and noticed the Inside Out center article with the nice pictures of plants etc. Although informative and well produced it contains three mistakes in the captions of the photos. These are:

Picture of 'Croton' is not that plant but a different genus it is a picture of Sansevieria ('mother-in-law's tongue") not Croton.

Picture of Pinus arnoldii pine cone is really a fern frond (probably Polypodium).

Picture of 'plethora of cacti' actually contains no cacti but a diversity of succulents mostly in the lily and spurge families.

As a university newspaper, I think we should be able to do a better job of presenting the facts.

Dr. Dale Vitt
Director, Devonian Botanic Garden

Negative stereotypes of aging dictate behavior

By **Phoebe Dey**

Buying into negative stereotypes about elderly people can decrease their ability to perform everyday tasks, said Dr. Sheree Kwong See, a systems professor of the U of A Department of Psychology.

"One example is memory," said Kwong See from her office on campus. "If everyone is telling you your memory will decrease when you are old, it will. Often elderly people just won't try as hard."

Kwong See's research identifies perceptions and stereotypes of older people. In the 1950s and 60s there was a fear of senior citizens being victims of widespread negative stereotypes, she said. More recent stereotypes about elderly people suggest a mixture of both positive and negative beliefs.

"When you test the domain of intelligence, which might be memory or language, older people are not expected to do as well," said Kwong See. "In contrast, there are positive views when we are assessing the personality of older people."

"They are now viewed as being sincere, wise and kind."

One of the greatest reasons for the shift in ideology is the way research was done many years ago, she said. The difference in the methodology is in the way questions were asked. In the 1950s respondents may have been asked 'Are old people dirty?' or 'Do old people have good memories?' The way the research was conducted only allowed people to agree or disagree with what was being said. Now when studies are done, participants are asked to explain themselves, giving a much more accurate representation of beliefs, said Kwong See.

Kwong See has confirmed that believing in negative stereotypes colors perceptions of the elderly.

"I have found that if older people do something competent, others will ignore it," she said. "But when the elderly do something incompetent, people will say, 'A-ha,' it's because they're old."

One prevalent stereotype about the elderly is that many are inactive and do not take care of themselves.

Hugh Hoyles, director of campus recreation at the university, comes in contact everyday with seniors who defy that stereotype.

"One example where we have many elderly participants is in recreational intramurals," said Hoyles. "We have close to 100 hockey teams and one league that is called 'Over 35.'

"In just that one league alone we have six teams with one 72-year-old, many people in their 60s and myself who is in my 50s," he said. "And that is just one league."

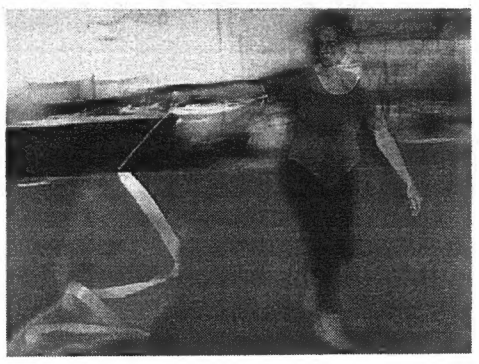
One of the biggest changes in health and fitness is older people are learning to take care of themselves, said Hoyles. The gyms, fitness and activity centers are now filled with seniors.

"In recreational swim time I see a lot of gray hair in the pool," said Hoyles. "So there are quite a number of examples in the program here that disprove that elderly stereotype.

"Sure there are lots that are sedentary but lots of people are active."

And it is those people who usually do not buy into the negative stereotypes, said Kwong See.

"If you are healthy you are not likely to take on the label of old," she said. "As long as you are functioning well you are not likely to take part in the stereotype."



Now that the beliefs have been identified, Kwong See and her colleagues are trying to show people how to break the negative cycle of labeling old people as incapable and incompetent.

"When you encourage an older person to let stereotypes guide their behavior by talking very loudly to them or speaking slowly, the older person is exposed to that on an everyday basis and will soon believe it," she said. "Many will withdraw from social interaction and take on the role that is presented to them.

"But when you make people aware of diversity and the need to focus in on the older person in front of them rather than the stereotype, in the long run we might be able to show them that beliefs matter and can change behavior in older people," said Kwong See. "We have to show people how to break the negative cycle." ■

Older bones don't mean older brains

Seniors flock to the Annual Program for Older Adults

By **Phoebe Dey**

Some young students might consider summer school a form of cruel punishment. But to the 270 people enrolled in the university's Program for Older Adults, several hours a day in the classroom is not enough.

"I wish it went on for three months rather than three weeks," Val Cload said about the spring session that started earlier this month. "As soon as the calendar comes I look through it, pick my classes and rush over with my money so I can get a spot."

Cload, a retired real estate agent, is enrolled in such classes as classical literature, entomology, and magic and science. She first became interested when her husband was sick.

"It was an outlet," said Cload. "I had heard from friends how wonderful it was. It was so very tantalizing." This spring marks her fourth time in the program for the senior. "I'm 63, but 36 in the mind," she said. "The fact that the bones get a little older doesn't mean the brain gets older."

The Program for Older Adults was started in 1975 when the Faculty of Extension received a government grant to encourage older students to participate in the university environment. In 1990, the grant was pulled, but the faculty continued to fund the program, said Margaret Ozarko, program manager at the Faculty of Extension.

Many of the courses are traditional but some such as *What's Happening to my Memory* and *Healing Sounds of Music* cater to the older audience. For a comparatively low fee of $135.00, students can take as many courses as they can fit into their timetable.

"Those who enroll are people who are very much alive and active in things," said Ozarko. "They lead a very active life and coming to the University of Alberta is just another facet for active living."

"When most people retire, they start to want to take courses they never had a chance to pursue before," said Ozarko. "Their goal was usually work."

Working took up a major part of David Chinnery's life before he retired from his job as an accountant. He and his wife, Marilyn have been in the program for several years.

"I like to learn new stuff," said Chinnery, 63. "This give me an opportunity to do that. I don't go to the program with any particular goal in mind, just a general interest."

Chinnery, who in his spare time reads, builds model ships and attends concerts, is studying entomology, *From Magic to Science*, *History of Manners* and a linguistics course called *Alcohol, Barbarians and Catapults*. He and Marilyn never seem to take the same courses. "It's not deliberate, it just happens that way," he laughed.

The program is not only a great outlet for the students but it is a good opportunity for the many graduate students, sessional instructors and professors who teach the courses, said Ozarko. "It gives a lot of the grad students a great opportunity, not only to give information but to get feedback. These students are very responsive," she said.

Some of the 22 courses offered in the fall program are *Journal Writing*, *Opera in Appreciation*, *Writing our Lives* and *British Detective Fiction*. Anyone interested in signing up can contact Margaret Ozarko at 492-5055. ■

Participants in the Program for Older Adults check out the costume department at the Timms Centre as part of their drama class.

U.S. seeks to emulate Canadian health system

Former U.S. deputy minister of health says "market-good" must become "public-good"

By **Louise J. McEachern**

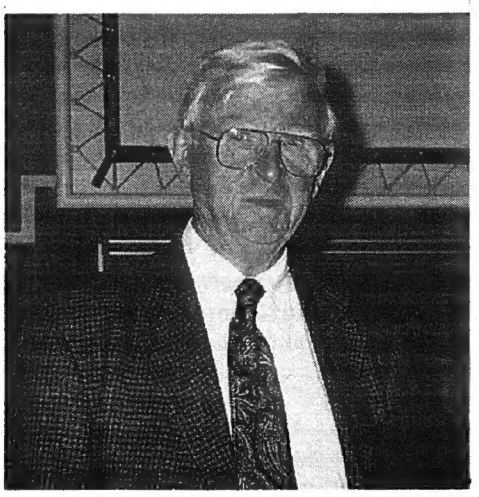
It's good to know that with all our complaints about health care, Canada still attracts international attention with its advanced services in hospitals, specialized clinics, and out-patient care.

Former Deputy Minister of Health in the United States, Dr. Philip Lee visited the U of A recently as the Walter C. Mackenzie honorary lecturer for 1998. As an expert in American health policy, Lee has traveled throughout Canada to examine how our programs contribute to one of the best quality health-care systems in the world.

The rising cost of health care, changing governments, economic instability of individual health organizations, and the changing spectrum of health problems-such as teenage pregnancy and drug abuse—are elements that profoundly impact health care in the U.S., says Lee. But he says our Canadian system, affected by the same kind of concerns, manages the challenges more effectively.

One of the major problems the U.S. is the disproportionate distribution of their profits, says Lee. "For-profit care is damaging the way we treat patients on a daily basis. Thirty percent of the profits are going into pockets of administrators and managers. This is unacceptable and has to change." Lee has been examining the Canadian model of socialized medicine because he has found it to be "more efficient at reducing costs." He says fee-for-service regulation by one insurer—such as the provincial government—has benefits compared to the complex fee structures in the U.S.

In the U.S., the complex system of HMO's, private service, and deductible



Dr. Philip Lee, Former Deputy Minister of Health in the United States

plans with medical savings accounts is often overwhelming for administrators, insurance companies, managers, and of course patients. New collaboration between the government and public health is helping to simplify a system that offers all services regardless of local need. "We are trying to shift the responsibility of identifying community health needs from federal to state to local government," says Lee. "This should provide systems that are simplified for needs at the local or user scale."

Another problem cited by Lee is the view of health care as a big profit industry in the U. S. In the market economy an ailing individual is little more than a dollar opportunity. "Changing this market-good mentality to a public-good mentality is the way of the future if health care is going to supply real care." ■

Nursing without a net

U of A nursing students learn the art of resourcefulness in primitive Guatemalan clinics

By **Judy Goldsand**

"We were in a makeshift clinic set up in an office in a Guatemalan village. A mother and father arrived in the evening carrying their small daughter who was severely dehydrated. The child was obviously too ill to be taken to the hospital which was a further two hour journey over a bumpy road, dangerous in the dark. So we took her in and started to re-hydrate her. She was unable to drink from a cup or suck on a bottle. So while she lay on blankets on a desk, our students in shifts spent the entire night feeding her re-hydration solution through a syringe."

Nursing professor Wendy Neander recalls the event vividly. It was a challenging situation for her and a group of 12 fourth-year U of A nursing students. But it was typical of health-care problems in remote areas of developing countries. Without laboratory facilities to help in diagnosis and treatment, the observation of physical symptoms becomes critical. Students learn to be more resourceful and to think of alternatives when sophisticated equipment is not at hand. It's a tremendous learning experience, says Neander.

Fortunately the child, Maria Carolina, responded and after 48 hours could be taken home. Her father insisted on showing his gratitude with a small payment. And the following week, her mother made the long trek back to the clinic to again offer profuse thanks.

Neander has been taking groups of students to Guatemala for a six-week summer nursing practicum since 1992. The practicum provides experience in different locales—large urban Guatemala City, a remote highland Mayan community, a tourist area and a coastal farming community. We want to give students an idea of how geography and climate affect people's health and their lives, says Neander.

Nursing professor Wendy Neander (left) and student Tara Coupland

Student Tara-Lee Hayden checks blood pressure

Tiny Maria Carolina in a makeshift Guatemala medical station

For Tara Coupland, a 1998 nursing graduate, the practicum was her first experience in outreach work. "It was hard seeing the poverty, and accepting that people have to live that way," she says. "But at the same time, I learned a lot from them. They go to great lengths to help each other. People carry their neighbors miles to the clinic simply because there is no one else to help."

The students work long hours, six days a week at the clinics assessing patients with conditions such as respiratory problems, gastrointestinal complaints, and headaches, or working in health education and disease prevention. Much of their work focuses on the health of women and children. The cervical cancer rate in the country is very high, so they frequently do gynecological exams.

There are 22 different aboriginal languages in the country and 80 per cent of women are illiterate, so personal contact is important in health education. During an outbreak of whooping cough in the highlands, the students trekked door to door with interpreters to convince people to immunize their children. "Seeing people living in one room with no ventilation and knowing they don't have refrigeration, or enough wood to boil water, made us think about alternative ways to maintain health," says Coupland.

The program has proven valuable in developing sensitivity and compassion in the students, says Neander, and it helps them recognize that people have to use whatever they have in a community to take control of their own health care. These are important skills for any kind of nursing, she says, and are transferable to similar communities in Canada.

The biggest change Neander has observed since 1990 when she began working in Guatemala is that there are now trained people to look after health issues in their own communities. And the Mayan people as a group are regaining pride in their ability to care for themselves, and in their own health knowledge. (The U of A also supports research in some Guatemalan universities about the medicinal value of local plants.)

Neander knows from personal experience the benefits of working in a different cultural setting. After receiving her master's degree in nursing from the University of Alberta in 1987, she worked as a nurse in Northern Canada and in a Mayan community in Guatemala. She developed the practicum program through contacts made during those years. "These experiences add a lot of meaning to my life."

The U of A Nursing contingent is supported by other groups both inside and outside Guatemala. Alberta's Wild Rose Foundation assists by providing funds to train local people as health promoters. And the nurses work closely with the Pueblo Partisans, a Canadian non-governmental organization that has developed some long-term programs in Guatemala to combat illiteracy and improve agriculture, both of which have considerable impact on health.■

Arsenic killing people of India

Indian environmentalist blames world aid organizations

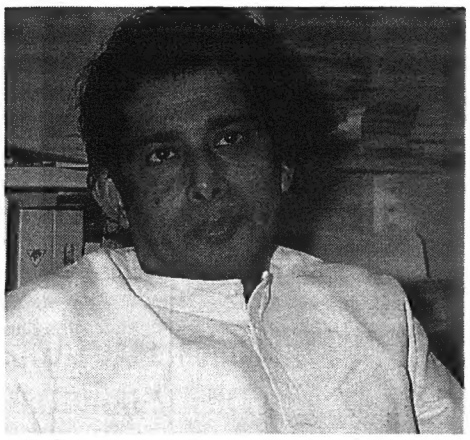
By **Louise J. McEachern**

The horror began in 1978 as people began dying with mysterious skin lesions. Villagers thought it was leprosy, scientists and doctors speculated the malady was caused by pesticides seeping into well water. No one suspected arsenic.

Arsenic occurs naturally in subsoils of west Bengal and Bangladesh in the form of arsenic sulfides. These complexes are usually tightly bound in soil particles but can, under specific conditions, be released from the soil and enter groundwater.

Dr. Dipankar Chakraborti director of the School of Environmental Studies at Jadavpur University in Calcutta visited campus last week to deliver a guest lecture at a recent environmental risk management seminar series sponsored by the Eco-Research Chair.

Chakraborti and his colleagues believe the large-scale withdrawal of ground water causes fluctuation of the water table and regular intake of oxygen within the pore space of the sediments. They think this inflow breaks down sulfides in the arsenic-laden pyrite rock through oxidization and releases arsenic into the water.



Dr. Dipankar Chakraborti

Chakraborti blames the World Health Organization (WHO), UNICEF and the World Bank for developing an irrigation system dependent on groundwater resources. Thousands of expensive tube wells were drilled to irrigate the high-yield crops in Bangladesh during the dry season. Millions of dollars have been donated by the international community to make Bangladesh more self-sufficient. "They should have tested the water for arsenic and they didn't. They are to blame," says Chakraborti. "Aid organizations think they can come in and clean-up our problems, but they don't do their research. Now we are faced with an enormous problem."

Symptoms range from lesions and large lumps on the hands and feet to a variety of skin ailments and death. "I am most worried about the children because they often do not show skin lesions before the age of 11. We also do not know the extent of internal damage that might be affecting organs," says Charkraborti. "Villagers come to see me from far away begging me to cure them." There is no cure for advanced stages of poisoning but studies have shown that those who have very low levels of arsenic in their blood can "increase their health if they eat better, drink safe water and exercise."

The problem is affecting 138,000 square km of West Bengal, with a population of 38.6 million people. The proposed solution is a 25 million dollar water main to pipe clean water supplies from elsewhere. About 20,000 Indians have been affected by arsenic tainted water and researchers at universities in Calcutta estimate an additional 30 million people could be affected.■

appointments

Colleen Mead appointed director of the Research Grants Office

Colleen Mead has been appointed director of the Research Grants Office effective Monday June 1, 1998.

A graduate of the University of Alberta, Mead comes to RGO following extensive experience in the University Research Branch of Alberta Advanced Education and Career Development. Recently, she has worked with the Intellectual Infrastructure Partnership Program, the Research Excellence Envelope, and in the development of the Research Key Performance Indicators; in 1995 she was project manager for the Cloutier Policy Review of University Research.

For several years, Mead has played a key role in briefing the minister and senior managers on various issues relating to university research. She brings a considerable breadth and depth of experience to her new role, ranging from detailed technical knowledge to high level policy development. In addition to her extensive activity in the university research area, Mead has had several years of broadly-based management experience both within government and in the community. ■

India's nuclear tests raise environmental fears

Damage inevitable—and irreversible—says U of A physicist

By **Louise J. McEachern**

In the aftermath of India's surprise nuclear weapons tests this month, environmentalists are scrambling to assess the damage. What short-term and long-term environmental impacts are we talking about? And why do governments continue to test?

"It is easy to obtain the parts to build a nuclear bomb," says Dr. Nathan Rodning, associate professor of physics. What's harder, is seeing if the parts you've assembled will work. "Refining uranium to create plutonium, although expensive, is not as difficult as is assembling the electronics."

"Complex electronics and geometry require an enormous amount of technical expertise," says Rodning. "...Countries with nuclear reactors often have the raw materials, but lack the technology to put it all together. Successful testing not only means the mechanism was built properly but it also symbolizes an advanced technical literacy—"Look, take us seriously."

> plutonium...is the most poisonous biological material known to man...

By while the tests may prove a political point, they will harm the environment, he says. The detonation of an underground nuclear device results in the emission of two of the most radioactive elements that exists: Strontium-90 and Caesium-137, along with other damaging elements.

These elements can seep into the groundwater and have the potential to be released into the atmosphere. Rodning says researchers claim underground testing will not have a profound impact on the atmosphere or the soil. They claim any radiation produced by the explosion is contained in a "glassified substructure"—melted rock as a result of the explosion.

"I'm particularly skeptical about this because we have no idea how long the radionuclides [radioactive elements] can be sealed," says Rodning. "It is impossible for leaks not to occur."

In order for scientists to obtain data, they must drill holes into the site thereby exposing the core allowing elements to leak into the atmosphere and local aquifers. There is no way to measure how much radiation can leak when holes are drilled. In addition, natural shifts in the earth's crust heighten the possibility of leaks.

Rodning is also worried about the decaying of Strontium-90 and Ceasium-137. These elements have a half-life of 30 years. That means their intensity will remain at full capacity for 30 years,.at which point, their intensity decreases by half. However, new evidence shows some radioactive elements increase in intensity once they begin to decay.

A worse threat, is that the plutonium in nuclear bombs "is the most poisonous biological material known to man and has a half-life of 24,100 years," says Rodning. In other words, it won't go away.

If the bomb itself was not enough, a process called "salting" can be used to magnify its devastating effects. In salting, layers of chemicals are added merely to increase the fallout capacity, a layer of tritium can be added to increase the power of the bomb. Rodning says there is no way for us to know whether the Indian government has conducted this type of test, but it is known that they have the ability to do so.

What's most frightening is what's unknown—the impact on the soil, the atmosphere, flora, fauna, and of course on humans. The extent of the damage is difficult to predict, however, we know the effects of other tests and can suspect the same types of damage.

If radioactive elements have seeped to a nearby aquifer, it might show up in water sources next week or in 20 years, says Rodning. And if we do find plutonium leaking into the water system, there is neither a cure nor a treatment for the contamination. Human exposure to plutonium results in leukemias, other cancers and other radiation-related diseases. "The land is a write-off forever, especially if scientists are uncertain about leakage," he says. ■

positions

The University of Alberta is committed to the principle of equity in employment. As an employer we welcome diversity in the workplace and encourage applications from all qualified women and men, including Aboriginal peoples, persons with disabilities, and members of visible minorities. In accordance with Canadian Immigration requirements, preference will be given to Canadian citizens and permanent residents.

INTERNATIONAL RELATIONS OFFICER—ASIA

INTERNATIONAL RELATIONS DIVISION, UNIVERSITY OF ALBERTA INTERNATIONAL

University of Alberta International seeks a highly motivated, enthusiastic international relations officer with knowledge and/or experience of East and Southeast Asia to assist the University of Alberta in pursuing its internationalization initiative by developing and maintaining relations/activities which support the university's strategic goals in that region.

Candidates should hold a university degree, have strong analytical, writing and communications skills and be able to work successfully in cross-cultural settings. Work/study experience in East and/or Southeast Asia and/or knowledge of an Asian or Southeast Asian language would be a definite asset.

The position is offered on the basis of a two-year academic contract. As a member of the academic staff of the university, the IRO will be entitled to all university benefits for academic staff. The pay range is $35,000 to $40,000 a year.

Further information relating to the position, its reporting relationship and duties can be obtained by contacting University of Alberta International at 403-492-2958. Fax 403-492-1488 or email: international@ualberta.ca. Information regarding the university's international activities is available at http://pangaea.abintl. ualberta.ca/

To apply:

Please forward a resume and cover letter explaining why you are particularly qualified for this job to

Margo Nelson
University of Alberta International
2-10 University Hall
University of Alberta
Edmonton, Alberta T6G 2J9
Or fax: 403-492-1488
Deadline: Friday, June 19, 1998.

ASSISTANT PROFESSOR IN ADVANCED ASSISTIVE TECHNOLOGY

POSITION: A tenure-track position in advanced assistive technology at the assistant professor level in the Faculty of Rehabilitation Medicine with a joint appointment in the Department of Rehabilitation Technology at the Glenrose Rehabilitation Hospital.

QUALIFICATIONS: Applicants are sought with a PhD (or equivalent) in rehabilitation engineering, rehabilitation neuroscience and/or assistive technology with additional background and documented experience in applied rehabilitation science and/or one of the rehabilitation disciplines (e.g., physical therapy, occupational therapy, speech-language pathology, allied health science, applied health science).

A research program and history of/potential for research productivity that will qualify the successful applicant for Alberta Heritage Foundation for Medical Research (AHFMR) and Natural Sciences and Engineering Research Council (NSERC) funding (or equivalent) are desirable.

CONTEXT: The Faculty of Rehabilitation Medicine at the University of Alberta includes 29 academic staff members. Most are affiliated with one of three departments, occupational therapy (OT), physical therapy (PT), or speech pathology and audiology. A few, with expertise in assistive technology and rehabilitation engineering, epidemiology and biostatistics, neuroscience or degenerative spinal disorders, have faculty appointments that are not associated with a specific department. The position advertised in this announcement would be an appointment at the faculty level.

The faculty offers two undergraduate degrees (BSc-OT & BSc-PT), and six degrees at the graduate level. Five of these are master's degree programs: three in speech-language pathology (MSLP-A; MSLP-B; MSc-SLP), one in occupational therapy (MSc-OT), and one in physical therapy (MSc-PT). The sixth graduate program offers an interdisciplinary PhD degree in rehabilitation science.

The faculty enjoys a close working relationship with the Glenrose Rehabilitation Hospital site in Edmonton's Capital Health Authority, and with the Department of Biomedical Engineering in the Faculty of Medicine and Oral Health Sciences at the University of Alberta.

RESPONSIBILITIES: The position carries expectations for teaching, research and service that are common to all tenure-track positions at the University of Alberta.

Teaching expectations include involvement in and/or responsibility for coursework at the undergraduate and graduate levels in augmentative/alternative communication systems and assistive technologies in rehabilitation. The expertise of the person in this position also will be sought in the development of interdisciplinary coursework at the graduate level that includes content related to rehabilitation and assistive technologies.

Research expectations include the leadership and further development of the Advanced Assistive Technology Laboratory in the Faculty, membership in and joint research activity with the Department of Rehabilitation Technology at the Glenrose Rehabilitation Hospital, and acquisition of external funding to support research in both venues.

Service expectations include the role of Chair of the Faculty's Technical Resource Group, assumption of some graduate student supervision, and committee work as appropriate at the Faculty and University levels.

APPLICATIONS: Please include a letter of intent, current curriculum vitae and the names and addresses of persons who can be contacted for letters of reference. Consideration of applications will commence August 31, 1998 and applications will be accepted until positions are filled. Enquiries and application materials should be made to

Albert M. Cook, dean
Faculty of Rehabilitation Medicine
3-48 Corbett Hall
University of Alberta
Edmonton, Alberta
T6G 2G4 CANADA
Phone: 403-492-5991 Fax: 403-492-1626

RESEARCH CHAIR IN MOLECULAR BIOLOGY OF BEEF CATTLE PRODUCTION

The Department of Agricultural, Food and Nutritional Science at the University of Alberta invites applications for a Canada-Alberta Beef Industry Development Fund Chair in the area of molecular biology of beef cattle production. The appointment will be made at the associate or full professor level with a balance of 75 per cent research and 25 per cent teaching.

The appointee will develop a world-class research and teaching program on the application of molecular biology techniques to the improvement of beef and beef cattle production. The chair is mandated to enhance cooperation between scientists and other stakeholders in an Alberta beef research network which includes the University of Alberta, Alberta Agriculture, Food, and Rural Development (AAFRD), and the Agriculture and Agri-Food Canada (AAFC) Research Centres at Lethbridge and Lacombe. The research program coordinated by the chair will involve the use of molecular techniques such as genomic analysis, linkage mapping and identifying genes responsible for variation in traits of economic importance, and the study of factors regulating gene expression. These molecular approaches will be integrated with experimental models currently in place in Alberta to study the physiological processes underlying production. The candidate will possess a PhD in a scientific discipline relevant to the study of the molecular biology of cattle, will have an established research record in molecular biology and a commitment to its application in research on bovine physiology and beef production. Demonstrated leadership ability, excellent communication skills and a strong commitment to technology transfer are essential. The University of Alberta has excellent on-campus research facilities and equipment, including a state-of-the-art Molecular Biology and Biotechnology Centre, numerous specialized analytical laboratories, a large animal metabolism unit, and a research ranch which includes a herd of 500 beef cows (for further details see www.afns.ualberta.ca). In addition the chair will have access to AAFC research stations in Lacombe and Lethbridge which offer an additional range of facilities and research strengths in many complementary areas including rumen microbiology / biotechnology and meat science. Applications, including a statement of research and teaching interests, curriculum vitae, and the name of three referees should be sent by August 1,1998 to

Dr. John Kennelly, chair
Department of Agricultural, Food, and Nutritional Science
University of Alberta
Edmonton, Alberta, Canada T6G 2P5

For further information on this position contact Dr. Kennelly at (403) 492-2131 / (403) 492-4265 (fax), email chair@afns.ualberta.ca or visit our web site.

AGRICULTURAL, FOOD AND NUTRITIONAL SCIENCE

The Department of Agricultural, Food and Nutritional Science at the University of Alberta invites applications for a tenure track assistant/associate professor position in human nutrition.

Responsibilities for this position include: 1) teaching human nutrition at the undergraduate and graduate levels, and 2) establishing an independent research program that applies biochemical and molecular techniques to studying the association between nutrients and health. The Department of Agricultural, Food and Nutritional Science has excellent nutrition and metabolism research facilities with a research focus on metabolism and utilization of nutrients at the whole body, tissue and cellular level, as well as applied aspects of nutrition and human health (for further details see www.afns.ualberta.ca). The successful candidate will have demonstrated leadership ability and is expected to develop a strong collaborative research program within the department and with appropriate researchers in the Faculty of Medicine, the Northern Alberta Home Nutritional Support Program, Cross Cancer Institute and Centre for Health Promotion Studies. In addition the incumbent will play a key role in strengthening linkages with industry as part of the department's "Food for Health" program. Qualifications include a PhD in human nutrition or related sciences, postdoctoral experience or an established research program and demonstrated excellence in teaching. The Department of Agricultural, Food and Nutritional Science offers undergraduate degrees in nutrition and food science and graduate degrees at both the MSc and PhD levels. The faculty emphasizes excellence in teaching: evidence of novel approaches and interest in alternative (non-traditional) teaching methods are an asset. Salary will commensurate with experience at the level of assistant/associate Professor.

The 1998/99 salary range for assistant professor is $40,638-$57,510 and for associate professor is $50,480-$72,152. Interested applicants should submit 1) their curriculum vitae, 2) the names of three referees, 3) a list of publications and 4) a statement of research and teaching interests by August 1, 1998 to

Dr. John J. Kennelly, chair
Department of Agricultural, Food and Nutritional Science
University of Alberta
Edmonton, Alberta T6G 2P5

For further information on the position contact Dr. Kennelly at 403 492 2131 / 403 492 4265 (fax), email chair@afns.ualberta.ca or visit our web site.

talks

Submit talks to Tamie Heisler by 9 a.m. one week prior to publication. Fax 492-2997 or e-mail at public.affairs@ualberta.ca .

MEDICINE AND ORAL HEALTH SCIENCES, AND THE DEPARTMENT OF BIOCHEMISTRY

June 8, 4:00 p.m.

Prunell Choppin, President, Howard Hughes Medical Institute, Chevy Chase, Maryland, "From a Three-Headed Bit to a Major Philanthropy: Howard Hughes and the Private Support of Biomedical Research" Bernard Snell Hall, Walter Mackenzie Health Sciences Centre.

PHYSIOLOGY

May 29, 3:30 p.m.

Douglas Watt Allan, "Normal and Pathogenic Neuromuscular Development of the Prenatal Rat Diaphragm." Room 207 Heritage Medical Research Centre.

June 5, 3:30 p.m.

Marelyn Wintour, Howard Florey Institute of Experimental Medicine, University of Melbourne, Australia "Fetal Programming of Adult Blood Pressure." Room 207 Heritage Medical Research Centre.

events

EXHIBITIONS

BRUCE PEEL SPECIAL COLLECTIONS LIBRARY

Until June 1998

"An Exquisite and Rational Enjoyment: From Early Travel Books to Baedeker Guides." Hours: Monday to Friday, 8:30 a.m. to 4:30 p.m. (extended hours as posted). B7 Rutherford South.

FINE ARTS BUILDING GALLERY

Until June 14

BDes (Bachelor of Design) Exhibition. Hours: Monday - Friday 10 a.m. - 5 p.m.

MCMULLEN GALLERY

Until September 2

"A Selection of Artworks from Alberta House, London, England"—from the collection of The Alberta Foundation for the Arts. Hours: Monday to Friday, 10 a.m. to 4 p.m.; Sunday, 1 to 4 p.m.; Tuesday, Wednesday, Thursday, 5 to 8 p.m. (subject to availability of volunteers). Information: 492-8428 or 492-4211.

THEATRE

STUDIO THEATRE

May 21 to 30

"The Devil's Disciple" by Bernard Shaw. Tickets and information: 492-2495. Timms Centre for the Arts.

notices

Please send notices attention Folio *400 Athabasca Hall, University of Alberta, T6G 2E8 or e-mail public.affairs@ualberta.ca. Notices should be received by 3 p.m. one week prior to publication.*

WHAT'S IN A NAME

Building name changes

The following functional name changes for buildings on campus reflect new occupants or activities going on in the building:

Current name	New name
Home Economics Building	Environmental Engineering Building
Printing Services Building	Human Ecology Building
Chemical & Mineral Engineering Building	Chemical & Materials Engineering Building
Rehabilitation Medicine Lecture Theatre	Childcare Centre

STUDY IN AFRICA

Campus under canvas

The Canadian Field Studies in Africa Program is pleased to offer a full semester safari in Kenya and Uganda where one can take a range of courses in biology, archeology and anthropology. This excellent program provides the student with an opportunity to study the rich diversity of equatorial plants, wildlife and peoples and is a perfect complement to the program's theme of *Biodiversity*. The program is designed primarily for third- and fourth-year undergraduate students and graduate students who would receive an excellent introduction to research opportunities.

This is a Langara College Program in association with Dalhousie University, McGill University, the University of Alberta and the University of British Columbia. The program meets the requirements for the Canada Student Loan Program.

Call Dr. Ross W. Wein at the Department of Renewable Resources, University of Alberta for more information. Phone 492-2038 or 492-3242.

WOMEN'S WORDS

The Women's Program, Faculty of Extension, is offering its Fifth Annual Summer Writing Week for women June 8 to 14. Courses include five day or weekend workshops in li(f)e writing, play writing, writing for children, poetry or prose. Instructors are Di Brandt, Eunice Scarfe, Judy Schultz, Nora Abercrombie, Carolyn Redl, Nancy Marcotte, Reinake Gerding-Lengle. Call 492-3093 for a brochure.

Readings

A dinner and readings will be held June 11 from 5 to 9 p.m., Saskatchewan Room, Faculty Club. Tickets are $14. The readings, which begin at 7 p.m. are free and open to both dinner guests and others.

Launch

A reception and book launch of the latest edition of *Other Voices* will be held June 8, 7 p.m., Rm 2-36 University Extension Centre. Free Admission. Phone 492-3093. Co-sponsored by Other Voices Collective and Women's Program, Faculty of Extension.

PRICE RETIREMENT RECEPTION

Friends and colleagues are invited to attend a retirement reception honoring Richard Price, Acting Director, School of Native Studies. The reception will be held on Thursday, June 11, 1998 from 3:00 to 6:30 p.m. at the Faculty Club Patio.

Contributions for a gift may be sent, by June 8, 1998 to the School of Native Studies, 11023-90 Ave., attention Lana (phone 492-2991).

ads

Ads are charged at $0.50 per word. Minimum charge: $3.00. All advertisements must be paid for in full by cash or cheque at the time of their submission. Bookings may be made by fax or mail provided payment is received by mail prior to the deadline date. Pre-paid accounts can be set up for frequent advertisers. Please call 492-2325 for more information.

ACCOMMODATIONS FOR RENT

CALL NOW! To buy, sell, lease a condominium. $44,000 to $695,000. Ask for Connie Kennedy, condo specialist/consultant, 25 years expertise. Re/Max, 482-6766, 488-4000.

EXECUTIVE CONDO with gorgeous river valley view. Victoria Plaza. Two bedrooms, 1 1/2 baths, $1,675/month. Immediate. Janet, 441-6441.

OLD STRATHCONA – exquisite executive condo, furnished, in the heart of Old Strathcona. Two storey loft design provides the ultimate in luxury and tranquility, view of Edmonton downtown skyline. Two bedrooms, 2 1/2 baths, steam shower, Jacuzzi ensuite, two terraces, secure parking, 1826 sq ft. July 1/98 – June 30/99. $2,000/month. For appointment call Janet Jenner-Fraser, 441-6441.

107 STREET & 84 AVENUE, furnished, two storey. Two bedrooms plus den, laundry room on second level. Sunny kitchen, hardwood throughout. Finished basement. $1,175/month. July 1, 1998 – June 30, 1999. Janet Jenner-Fraser, Gordon W.R. King & Assoc, 441-6441.

ASPEN GARDENS, furnished four bedroom. Two storey, finished basement, southfacing backyard. July 15, 1998 – August 1, 1999. $1,150. Janet Jenner-Fraser, Gordon W.R. King & Assoc, 441-6441.

GORGEOUS UNIVERSITY AREA HOMES. Furnishings available. Possible rent-to-own. Email: aurora@planet.eon.net, (403) 465-9715.

UNIVERSITY AREA – Executive suite. Two bedroom. Furnished. $650+ utilities. (403) 465-9715. Email: aurora@planet.eon.net

QUIET, ELEGANT, THREE BEDROOM HOME on Hornby Island, B.C. Perfect for sabbatical, mid-August 1998 – June 30, 1999. $750/month. Phil, (403) 220-8076, elder@evds.ucalgary.ca

FURNISHED HOUSE – September 1998 – May 1999 (approximately); $880 per month includes grand piano. Very quiet, 18 minutes to University. Please call 492-1279; or e-mail: reuben.kaufman@ualberta.ca

SASKATCHEWAN DRIVE – penthouse, two bedrooms, 2.5 baths. Jacuzzi, airconditioned. Fireplace, underground parking..$1,800/month. 426-7007, 9-5.

IDYLLIC SALTSPRING ISLAND – fully equipped comfortable house, spacious sleeping for 6. Sauna, seaview, huge deck. Situated on 1.2 treed acres near enchanting sandy beach. Available from July 25, 1998. $750 weekly. Gillian, 426-6887 or 963-7967.

WINDSOR PARK, three bedroom house. $1200/month. Please call 438-9353.

THREE BEDROOM RANCH HOME on 50 acres with horse facilities available August for two year lease. Located near Devon, 20 minutes drive to University. $1,200/month. 987-5318.

McKERNAN, 3 bedrooms, 2 bathrooms, hardwood, finished basement, appliances, single garage, near amenities, 436-0634.

BEAUTIFUL 1,300 SQ FT, two storey, loft-style condo. Two bedrooms, two baths, jacuzzi, washer/dryer, dishwasher, underground parking, one block from river valley and Grandin LRT. Short walk or ride to University, $1,100/month. September 1 – April 30, 488-2207.

NEAR UOFA – four bedroom, five appliances. Fireplace. $875/month. Nonsmoking. Available August 1, 1998. (403) 433-0870.

HOUSE AVAILABLE FROM JULY 1 – spacious 2,000 sq ft home with four bedrooms, three bathrooms, fireplace. Large backyard with patio, hardwood floors, and attached garage. Located in south Edmonton, close to schools and shopping. Prefer no pets and nonsmokers. Please call 439-5024.

HOUSESITTER WANTED for three-bedroom, Millcreek area. Two bathrooms, fenced yard, garage. Ten minutes to University, two blocks from bus, one block from Bonnie Doon. Available mid-August to June/July 1999. $700/month including utilities, cable, not heat. Furnished. (403) 468-4053; e-mail: jproby@freenet.edmonton.ab.ca

FURNISHED HOUSE available August, 12-month lease. Newly-renovated bungalow, garage, Goldbar, three bedrooms plus two downstairs; two full bathrooms. Steps to trails – bike, run and hike in summer, cross-country ski in winter; five minute drive to downtown, 12 minutes to University. View of river valley from large deck, $975/month. 492-9586.

BELGRAVIA, three bedroom bungalow available now. $950/month. 436-5992.

ACCOMMODATIONS FOR SALE

VICTORIA PROPERTIES – Knowledgeable, trustworthy realtor with Edmonton references will answer all queries, send information, no cost/obligation. AHassle-free@ property management provided. (250) 383-7100, Lois Dutton, Duttons & Co. Ltd. #101-364 Moss Street, Victoria B.C. V8V 4N1

UNIQUE EXECUTIVE TOWNHOUSE CONDO overlooking river valley. Two storey, two bedrooms. Price reduced. $179,900. Janet, Gordon W.R. King and Associates, 441-6441.

RIVERWIND PENTHOUSE – over 2000 sq ft of exquisite living spaces. View to downtown and river valley east. Dream kitchen, two bedrooms plus den. For appointment call Janet Jenner Fraser, Gordon W.R. King and Associates Real Estate Corporation, 441-6441.

RIVERBEND – KEEP YOUR PET! Simplify your life with this stylish Brass III townhouse in Eagle Ridge Place. Riverbend Square and river valley walks at your doorstep. Two bedrooms, 2 1/2 baths, jacuzzi ensuite. $189,500. Janet Jenner-Fraser, Gordon W.R. King and Associates, 441-6441.

MILL CREEK NEW LISTING within the Park boundary! There are no homes across or at the rear of this 2 1/2 storey. Upgraded but with its original charm. Four bedrooms plus attic/playroom. New double garage. Marjorie King, Spencer, 483-7170, residence, 435-0395.

UNIVERSITY/SASKATCHEWAN DRIVE/BELGRAVIA – Unique, 2,000 sq ft bungalow. Direct river valley access. $318,800. 436-1756.

EXECUTIVE 1,200 sq ft condo, 10809 Saskatchewan Drive, two bedrooms, two bathrooms in quiet, three-year-old adult building. Upgraded kitchen, 9 ft ceiling, insuite laundry, gas fireplace, underground parking. Balcony view of downtown. $135,000. 439-0675.

ACCOMMODATIONS WANTED

BUSINESS EXECUTIVE requires fully furnished 2-3 bedroom house for one year, starting May or June 1998. Alex, 436-3399.

CORPORATE CLIENT requires executive home in Riverbend, for July and August (furnished), Janet, 441-6441.

CORPORATE CLIENT requires 3000 sq ft home, southwest or westend, for a year or more, unfurnished. Janet, 441-6441.

GOODS FOR SALE

CASH PAID for quality books. The Edmonton Book Store, 433-1781.

SERVICES

TECH VERBATIM – editing, desktop documents, medical terminology, on campus. Donna, 922-3091.

DAVID RICHARDS CARPENTRY. Certified journeyman NAIT. Complete interior/exterior residential, commercial renovations including plumbing/electrical. No job too big/small. References available. 436-6363.

HOME CLEANING – Hardworking, bonded staff. Reasonable rates. Able Maids, 433-9697.

INDEXING SERVICES, experienced in academic publishing. Bridgework, 452-8325.

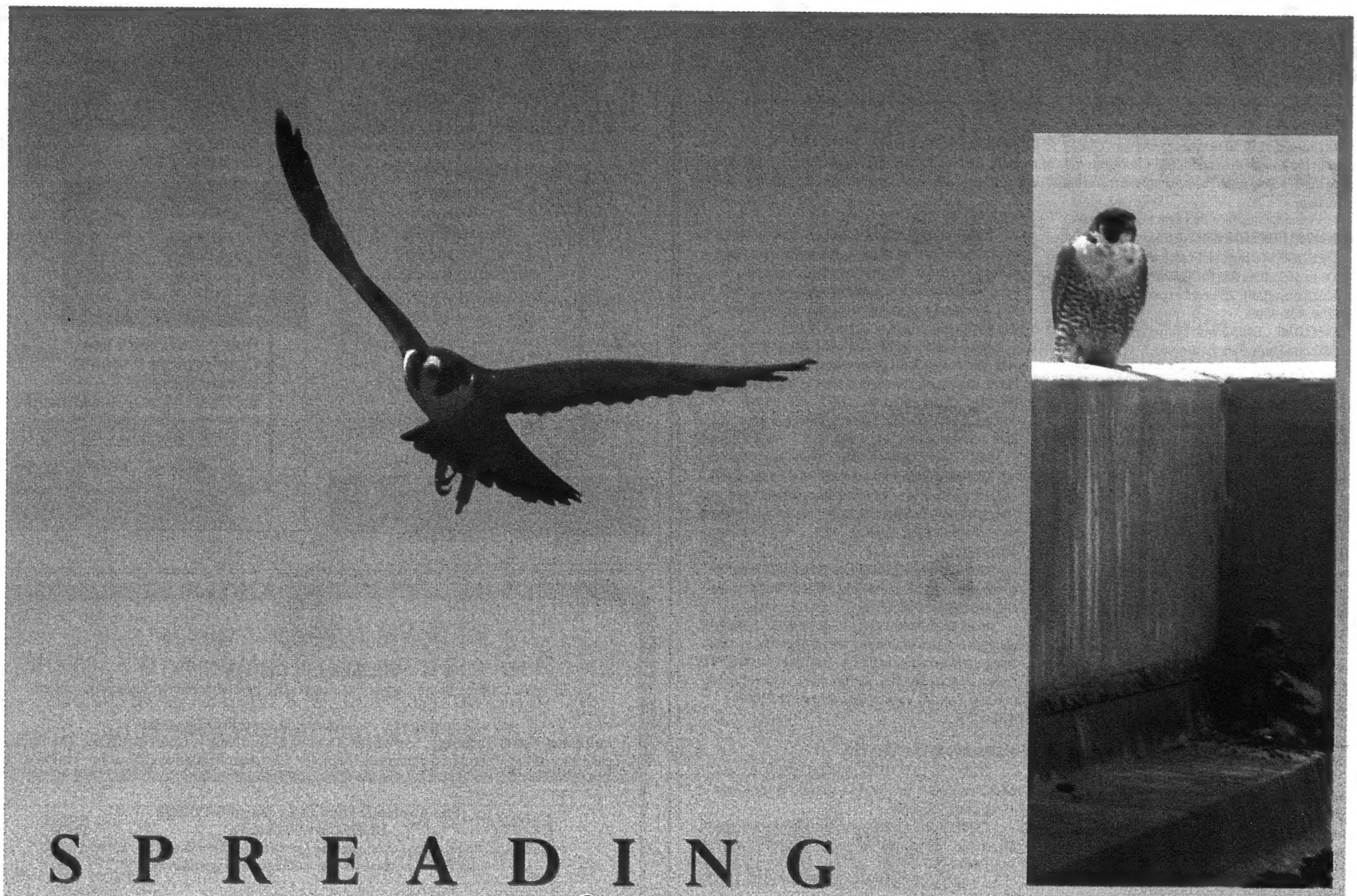
MISCELLANEOUS

SPANISH AND CANTONESE SPEAKERS SOUGHT – we are looking for people who speak English with either a Spanish or a Cantonese accent for a speech recognition study. Approximate time: two hours. Honorarium $20. For more information, call Kama, 492-5386.

1998-99 KILLAM ANNUAL PROFESSORS

The following eight individuals have been named 1998-99 Killam Annual Professors:

- Dr. Simaan AbouRizk, Department of Civil and Environmental Engineering
- Dr. Wiktor Adamowicz, Department of Rural Economy
- Dr. David Chanasyk, Department of Renewable Resources
- Dr. Phillip Fedorak, Department of Biological Sciences
- Dr. Michael Gibbins, Department of Accounting and Management Information Systems
- Dr. Jonathan Hart, Department of English
- Dr. Ellie Prepas, Department of Biological Sciences
- Dr. Nallamuthu Rajaratnam, Department of Civil and Environmental Engineering



SPREADING *wings*

By **Geoff McMaster**

High on the east ledge of the Clinical Sciences Building, all is quiet. After weeks of activity around the nest site of two peregrine falcons, it appears to be abandoned.

But try going up to look inside and you may be risking your life.

According to Alberta Environmental Protection biologist Gordon Court, inactivity this time of year means the female is inside sitting on her eggs, with the male perched somewhere in the distance guarding. Mess with mama, nicknamed "the Flying Scalpel," and you'll likely be given a violent warning.

"I've seen them in the arctic drive off large carnivores (like grizzly bears)," says Court, who monitors peregrines to track their movements and population levels. "The female there now is extremely aggressive. Certainly anyone on the ledge of the Clinical Sciences Building would not be very welcome."

Neither are other birds. One unlucky female peregrine tried moving in on the Flying Scalpel a few weeks ago and almost lost her head. Dr. Steve Hrudey in environmental health sciences witnessed the whole drama from his office window.

"There was a tiff going on this spring. For a few days there were three adults swooping around. One of them was sitting on top of the house, and it must have been the aggressive one who came dive-bombing in there and just knocked the other one right off. I thought she had taken her head off...it's pretty vicious."

Hrudey says visiting television crews have also riled her. "Those guys are a little naive about this...one guy got scraped up, had blood coming down his head, the whole nine yards." Court always wears a motorcycle helmet and leather jacket when working around peregrines.

Competition over three nest sites in the city – the U of A, one on the Telus building downtown and another at Inland Cement in the west end – is also a good sign the species is making a comeback.

Once all but gone from Alberta, the peregrine population is now on the rise, largely because of the banning of DDT in Canada in 1969. Until very recently, however, the falcon was still threatened by the pesticide when it migrated to countries in Central and South America. Now that DDT is no longer commonly used there, says Court, residue in falcon eggs has been steadily dropping, and the peregrine's future looks bright.

Court says the two adults now living on campus are likely the descendents of some 34 captive chicks released in the '70s and early '80s from the Longman building on the university farm. For some inexplicable reason, even back then, some of the fledglings took their maiden flights straight to the Clinical Sciences Building.

Hrudey noticed the first in 1991, and while the current 11-year-old male is closing in on the average 14-year life span for an urban peregrine, the nest will probably always be in use, says Court.

"Once it's established as a chosen spot, you'd have to tear the building down to make it unattractive." There must be something about the building, he says, that looks good from the air. Perhaps the ledge resembles a cliff. Perhaps the falcons somehow sense their chances of survival there are strong.

What Court does know is that it's a great place to learn how to fly. There are no great horned owls around (their main predator) and when they do happen to fall, there are enough people walking by to come to their rescue.

"It's pretty amazing – at about 40 days of age most of them do pretty well flying. But it's like giving a 12-year-old kid one of those Kawasaki Ninja motorbikes – they have all the equipment to go 250 miles an hour, but no knowledge of how to use it."

Court says if the chicks fly off the building in a good wind, they can hit speeds of 100 miles per hour. Unfortunately, they often collide with something. Roughly half of them perish in their first year.

If all goes well, this new clutch of chicks will hatch by mid-June, when Court will once again don protective gear to place bands on them. By the end of July, the fledglings will take to the air.■

Photos: Environmental Risk Management, Department of Public Health Sciences

»quick »facts

- Because of DDT contamination, by 1970 there was only one known pair of peregrines nesting in Canada east of the Rocky Mountains and south of the Northwest Territories. They had completely disappeared from the North and South Saskatchewan River Valleys.
- DDT residue concentrates up the food chain, with peregrines near the top. The pesticide collects in the bird's fat, eventually interfering with reproduction in breeding adults.
- The peregrine falcon was listed as endangered in 1987 under Alberta's wildlife act.
- In Southern Alberta, populations depend on the release of captive-bred young. There are now more than 75 pairs in Southern Canada.
- Perhaps the fastest of all birds, peregrines can reach speeds of almost 320 kph in a dive.
- They typically nest near rivers, streams and marshes away from human disturbance.
- Nests are usually situated on ledges of rock or clay cliffs where they are protected from predators and the weather.
- Peregrines don't actually build a nest. They scrape out a bowl-shaped indentation in loose soil, sand or gravel on the ledge of a nest site.
- The female lays her eggs in mid-May, and both adults help to incubate them for about 33 days. The female, however, does most of the incubation, while the male brings her food.
- Eggs hatch in mid-June. Young peregrines begin to fly, or fledge, at 35 to 45 days.

Courtesy of Alberta Environmental Protection